AMENDMENTS TO THE CLAIMS

The following listing of claims shall replace all prior versions and listings of claims in this application.

Listing of claims:

1. (Currently Amended) A phase angle detection system comprising:

a rotary sensor comprising a magnet rotating about an axis and a plurality of magnetic field sensors angularly spaced about said axis;

~~a phase angle pulse modulation circuit and PWM generator circuit coupled to an input signal provided by each of said magnetic field sensors; and~~

a first multiplier configured to receive an input from a first of said magnetic field sensors and a first sinusoidal signal and provide a first output;

a second multiplier configured to receive an input from a second of said magnetic field sensors and a second sinusoidal signal and provide a second output;

an adder circuit configured to sum said first and said second outputs and provide a third output being the sum of the first output and the second output; and

an output circuit configured to receive said third output and provide a fourth output having a characteristic proportional to said phase angle

~~a PWM to analog signal circuit coupled to an output of said modulator and PWM generator circuit~~.

2. (Original) The system of claim 1, wherein said rotary sensor comprises a first and a second magnetic field sensor spaced about 90 degrees apart about said axis.

3. (Currently Amended) The system of claim 1, wherein ~~said phase angle pulse modulation circuit and PWM generator circuit comprises:~~

~~a quadrature oscillator adapted to generate a first signal equal to sin ωt and a second signal cos ωt;~~

said first multiplier comprises an in phase multiplier ~~adapted to multiply~~ which multiples a sine input signal from said rotary sensor by said ~~quadrature oscillator first signal~~ first sinusoidal signal; and

said second multiplier comprises a quadrature multiplier ~~adapted to multiply~~ which multiples a cosine input signal from said rotary sensor ~~by a quadrature oscillator second signal; and~~ by said second sinusoidal signal

~~an adder circuit adapted to sum an output from said phase multiplier and an output from said quadrature multiplier~~.

4-7 (Cancelled)

8. (New) The system of claim 1, wherein said first and said second sinusoidal signals are provided by a quadrature oscillator.

9. (New) The system of claim 1, further comprising a PWM to analog signal circuit coupled to said fourth output and configured to provide an analog output in response to said fourth output.

10. (New) A phase angle detection system comprising:

a rotating magnet and a first and second magnetic field sensor angularly spaced about said rotating magnet;

an in phase multiplier which multiplies an input from said first magnetic field sensor by a first sinusoidal signal to provide a first output;

a quadrature multiplier which multiples an input from said second magnetic field sensor by a second sinusoidal signal to provide a second output;

an adder configured to receive said first and second outputs and provide a third output being the sum of the first and second outputs; and

an output circuit configured to receive said third output and provide a pulse width modulated output having a characteristic proportional to said phase angle.

11. (New) The system of claim 10, wherein said first and second magnetic field sensors are spaced about 90 degrees apart about said axis.

12. (New) The system of claim 10, wherein said first and said second sinusoidal signals are provided by a quadrature oscillator.

13. (New) The system of claim 10, further comprising a PWM to analog signal circuit coupled to said pulse width modulated output and configured to provide an analog output in response to said fourth output.